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TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
YO999-495

In Re Application Of: Robert Baseman et al.

Serial No. 09/731,772	Filing Date December 8, 2000	Examiner Gerald J. O'Conner	Group Art Unit 3627
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Invention: VALUE-BASED FRAMEWORK FOR INVENTORY MANAGEMENT

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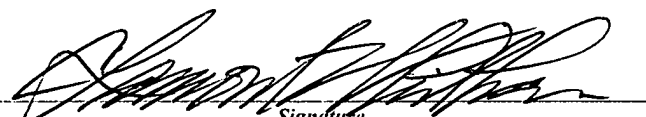
GROUP 3600

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

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Signature

Dated: August 25, 2003

C. Lamont Whitham, Reg. No. 22,424
Whitham, Curtis & Christofferson, P.C.
11491 Sunset Hills Road, Suite 340
Reston, Virginia 20190
(703) 787-9400
CUSTOMER ID: 30743

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of

Robert Baseman et al.

Serial No. 09/731,772

Group Art Unit 3627

Filed December 8, 2000

Examiner Gerald J. O'Conner

For VALUE-BASED FRAMEWORK FOR
INVENTORY MANAGEMENT

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

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APPELLANT'S BRIEF UNDER 37 C.F.R. §1.192

This brief, which is filed herewith in triplicate, is in furtherance of the Notice of Appeal, filed in this case on July 7, 2003.

This brief contains these items under the following headings, and in the order set forth below (37 C.F.R. §1.192(c)):

- I. REAL PARTY IN INTEREST
- II. RELATED APPEALS AND INTERFERENCES
- III. STATUS OF CLAIMS
- IV. STATUS OF AMENDMENTS
- V. SUMMARY OF INVENTION
- VI. ISSUES
- VII. GROUPING OF CLAIMS
- VIII. ARGUMENTS

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☐ ARGUMENT VIIIA. REJECTIONS UNDER 35 U.S.C. §112, FIRST
PARAGRAPH

☐ ARGUMENT VIIB. REJECTIONS UNDER 35 U.S.C. §112, SECOND
PARAGRAPH

☒ ARGUMENT VIIC. REJECTIONS UNDER 35 U.S.C. §102

☒ ARGUMENT VIID. REJECTIONS UNDER 35 U.S.C. §103

☐ ARGUMENT VIIE. REJECTION OTHER THAN 35 U.S.C. §§102, 103
AND 112

IX. APPENDIX OF CLAIMS INVOLVED IN THE APPEAL

X. OTHER MATERIALS THAT APPELLANT CONSIDERS NECESSARY OR
DESIRABLE

I. REAL PARTY IN INTEREST

The real party in interest in the appeal is:

☐ the party named in the caption of this brief.

☒ the following party: International Business Machines Corp. of
Armonk, New York

II. RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal:

☒ there are no such appeals or interferences.

☐ these are as follows:

III. STATUS OF CLAIMS

The status of the claims in this application are:

A. Total number of claims in Application

Claims in the application are: Claims 1 to 12

B. Status of all the claims:

1. Claims cancelled: none
2. Claims withdrawn from consideration but not cancelled: none
3. Claims pending: Claims 1 to 12
4. Claims allowed: none
5. Claims rejected: Claims 1 to 12

B. Claims on Appeal.

The claims on appeal are: Claims 1 to 12

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IV. STATUS OF AMENDMENTS

The status of amendments filed subsequent to the final rejection are as follows: No amendments have been filed subsequent to the final rejection.

V. SUMMARY OF INVENTION

The invention as defined in the claims on appeal is directed to a method and apparatus for calculating optimal inventory quantities which employs financial portfolio management tools. As explained on pages 1 and 2 of the specification, prior inventory management techniques generally fall into the categories of deterministic demand or stochastic demand. In a more advanced material requirements planning inventory control system, future demand is assumed to be a known quantity. As explained on page 5, line 19, to page 6, line 9, typical inventory management techniques involve calculating a supply quantity vector Q that minimizes the expected cost of backlogging the inventory. Variations on this theme are presented at the top of page 6 of the specification and are focused on minimizing the cost of inventory to satisfy demand with no less than a certain probability for each product, achieving a certain average customer service level for all products, and maximizing average customer service with a budget constraint.

In contrast to the prior art, the disclosed and claimed invention contemplates using "put" and "call" options in calculating variables for inventory control management. The "put" and "call" options are random variables and correspond to a right to purchase or right to sell an asset at a pre-specified price within a pre-specified time period. There are no penalties for not exercising options. Contrasting equation (2) on page 5 of the specification with equation (3) on page 7 of the specification, it can be seen that in the present invention, (defined in equation (3)) a shortage quantity corresponding to a "call" option and an inventory quantity corresponding to a "put" option are considered, and that the expected cost of holding a supply (as set forth in equation (1)) becomes a "financial problem" or a "portfolio optimization problem" wherein the expected value of a portfolio of put and call options is maximized. As indicated on page 7 of the specification, the objective is to determine the best strike price (Q_i) that maximizes the expected value of a portfolio of put and call options

given b_i call options and h_i put options for an asset in the portfolio.

Contrasting equation (4) and equation (5) on pages 7 and 8 of the specification, it can be seen that the invention recasts the Newsboy problem in inventory control theory into a financial portfolio problem where the objective is to calculate the best set of strike prices (Q_i) that maximizes expected value of the portfolio given that the portfolio should have $(p_i - c_i)$ units of covered calls and $(c - s)$ units of short position for the asset.

With reference to the drawings, Figure 1 shows a computer system architecture on which the invention may be implemented. A server 101 serves as the hub of a computer system that includes clients 102₁ to 102₆ connected via an intranet 103, wireless clients 104₁ to 104₄, and multiple other clients of various types 105₁ to 105₅ connected via the Internet 106. The server 101 is also connected to a storage system 107 which provides storage for the computer system.

Figure 2 shows a flow diagram that can be used as a general approach to solve the financial portfolio management problems as applied to inventory control. The data 200 (stored for example in storage system 107) includes

- demand forecast: probability distribution of demand
- market price for products
- manufacturing or purchasing cost for products
- holding and backlogging cost for products
- inventory quantities for products

The process begins by updating the data for each product in function block 201. Then, the inventory problem is converted to a financial portfolio problem in function block 202. Portfolio optimization is started in function block 203. A grid of service targets (as set out in Problems 2.a, 2.b at the top of page 6 of the specification) is generated in function block 204. A processing loop is then entered which begins with function block 205 where the next service target is accessed. In function block 206, Monte

Carlo technique or other methods are used to calculate the strike prices (inventory quantities) that minimize cost for the given service or maximize service for the given Problems 2 (page 5), 2.a, 2.b, 2.c (page 6), or 5 (page 8). The results (quantities, service, cost) are recorded in function block 207. A determination is made in decision block 208 as to whether all service targets have been covered. If not, the process loops back to function block 205 to access the next service target. When all service targets are serviced, tables and graphs of the collection of calculated values (quantities, service, cost) is generated in function block 209.

VI. ISSUES

The issues presented in this appeal are two:

1. Whether claims 10 to 12 are anticipated under 35 U.S.C. §102 on the “admitted prior art, as described in the written specification”.
2. Whether claims 1 to 9 are unpatentable under 35 U.S.C. §103(a) over the “admitted prior art, as described in the written specification”.

VII. GROUPING OF CLAIMS

Group 1 includes claims 1 to 9, drawn to a method for managing inventory.

Group 2 includes claims 10 to 12, drawn to a computer system for managing inventory.

The claims do not stand or fall together. Reasons as to why the grouped claims are separately patentable are included in the arguments.

ARGUMENT VIII.A. REJECTIONS UNDER 35 U.S.C. §112, FIRST PARAGRAPH

There are no rejections under 35 U.S.C. §112, first paragraph.

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ARGUMENT VIIIB. REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH

There are no rejections under 35 U.S.C. §112, second paragraph.

ARGUMENT VIII.C. REJECTIONS UNDER 35 U.S.C. §102

Claims 10 to 12 stand rejected under 35 U.S.C. §102. More specifically, the Examiner states the following:

“Apparatus claims 10-12 are rejected under 35 U.S.C. 102 as being clearly anticipated by the admitted prior art, as described in the written specification. Note that, in making this rejection, the nature of the particular portfolio/inventory of assets being evaluated has been deemed merely an intended use of the claimed invention, hence, afforded little patentable weight.”

The rejection on the one hand seems to acknowledge the novelty of the invention yet, on the other hand, gives “little patentable weight” to that novelty. The Examiner dismisses the novelty of the claimed invention as “merely an intended use”. It is respectfully submitted that the Examiner is in error and the rejection should be reversed.

The first question is what is “the admitted prior art, as described in the specification.” On pages 1 and 2 of the specification under the heading “*Background of the Invention*” there are set out the known inventory management problems categorized as deterministic demand and stochastic demand, for which there are known models. For instance, the method of MRP (Material Requirements Planning) is an example of deterministic inventory planning, and an example of the second category is the (S,s) inventory model where an order of $Q = S - s$ is placed when inventory position (inventory on hand plus on order minus demand backlogs) drops to s . But the claimed invention belongs to neither of these categories. Rather, the invention applies techniques of financial risk management to the inventory management problem. This has not been done before. So what is it that the Examiner considers to be “the admitted prior art, as described in the specification”? In the “SUMMARY OF THE INVENTION” on page 3 of the specification, the statement is

made that “This invention enables companies to calculate optimal inventory quantities *using a technology that already exists in the field of finance*” (emphasis added).

It is necessary to look to the Examiner’s rejection of claims 1 to 9 under 35 U.S.C. §103(a), discussed in the next section, in order to determine what the Examiner considers to be the “admitted prior art”. Specifically, the Examiner alleges that the “admitted prior art, as described in the written specification, *clearly indicates that the instant invention as a whole involves no new financial formulae or analytical techniques*” (emphasis added). Applicants do not claim a new financial formula as their invention, but they do claim new analytical techniques as applied to the inventory problem. The Examiner continues saying, “The instant invention lies in using a computer to apply these known manual analytical techniques to simply solve a known math problem concerning the valuation of assets, possibly wherein the assets are physical assets of an inventory/portfolio (such as cars stored in a warehouse) instead of financial assets of an inventory/portfolio (such as the titles of the cars in the warehouse or the deed of the warehouse itself).” This is a total mischaracterization of the disclosed and claimed invention. First, the Examiner attempts to equate “inventory” and “portfolio”, and there is no basis for this except Applicants’ own disclosure. Second, the Examiner suggests an example, cars as a physical asset versus titles of the cars as documents representing financial assets, which is at best a distortion of the inventory management problem and at worst misleading. The inventory management problem is a real and non-trivial problem in any manufacturing business, as evidenced by the literature cited on page 2 of the specification. The attempt by the Examiner to trivialize the problem does not aid in the analysis.

The second question is what is claimed. Claim 10 is directed to “A computer system for managing inventory”. This computer system comprises “a plurality of clients connected to a common server and a storage system connected to the server”.

See Figure 1 of the drawings. The storage system stores “demand forecast, market price for products, manufacturing or purchasing cost for products, holding and backlogging cost of products, and inventory quantities for products”. The server receives “inputs from the clients” and converts the “inventory problem to a financial portfolio problem”. The server also generates “a set of possible inventory investments”, computes “a value of possible inventory investments”, and selects “an inventory investment with a best value”. Claim 11 adds that the server “converts the inventory problem into a financial portfolio problem by expressing the inventory problem as a combination of long and short positions and put and call options on an asset.” The Examiner has not explained how his example of cars in a warehouse and titles to the cars can be expressed “as a combination of long and short positions and put and call options”. Claim 12 adds that the server “computes the value of possible inventory investments by decomposing cash flows associated with the inventory investment into a combination of cash flows that can be represented by a portfolio comprised of long and short positions in an underlying asset, computing with a valuation methodology the value of each long and short position in the portfolio, summing values of each long and short position in the portfolio, and setting the value of the inventory investment equal to the value of the portfolio.”

The Examiner states the following:

“The instant invention claims ‘converting’ the asset valuation problem from one type of problem for an ‘inventory’ to another type of problem for a ‘portfolio’, but no ‘conversion’ is actually performed at all. The ‘conversion’ comprises simply using/applying one set of known formulae/techniques allegedly preferred for ‘portfolios’ instead of using another set of known formulae/techniques allegedly preferred for ‘inventories.’ No actual ‘conversion’ is performed because there is no patentable distinction between a ‘portfolio’ and an ‘inventory.’

Both terms comprise a collection of assets. Nor is anything done to the problem to actually effect any converting, the sole extent of 'conversion' merely comprising applying a different set of formulae/techniques than would allegedly otherwise be applied."

The Examiner cannot have it both ways. He cannot on the one hand say "no 'conversion' is actually performed at all" and then say what he really means is that he gives "no patentable distinction between a 'portfolio' and an 'inventory'" and, therefore, no "conversion" is performed. It is clear that the Examiner recognizes that there is a difference between an inventory and a financial portfolio and, further, that there is novelty to applying financial asset portfolio management tools to manage inventory – he just refuses to acknowledge that the novelty should be given patentable weight.

There is nothing in the prior art that would suggest that inventory management can be perceived to be a problem that can be characterized and managed as financial risk management. This is the contribution of the inventors in this patent application. The Examiner seems to implicitly acknowledge this when he says that "in making this rejection, the nature of the particular portfolio/inventory of assets being evaluated has been *deemed merely an intended use* of the claimed invention, hence, *afforded little patentable weight*" (emphasis added). In other words, the Examiner is specifically ignoring the very novelty of the claimed invention. Note also that the Examiner has equated "portfolio" and "inventory", but the only basis for this is Applicants' own disclosure. Furthermore, this is not "admitted prior art", as the specification makes clear.

The Court of Appeals for the Federal Circuit in *In re Paulsen*, 31 USPQ2d 1671 (1994), at pages 1674 and 1675, has considered the question of intended use and commented as follows:

"The preamble of a claim does not limit the scope of the claim when it

merely states a purpose or intended use of the invention. *See DeGeorge v. Bernier*, 768 F.2d 1318, 1322 n.3, 226 USPQ 758, 761 n.3 (Fed. Cir. 1985). However, terms appearing in a preamble may be deemed limitations of a claim when they ‘give meaning to the claim and properly define the invention.’ *Gerber Garment Technology, Inc. v. Lectra Sys., Inc.*, 916 F.2d 683, 688, 16 USPQ2d 1436, 1441 (Fed. Cir. 1990) (quoting *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 896, 221 USPQ 669, 675 (Fed. Cir.), *cert. denied*, 469 U.S. 857 (1984)). Although no ‘litmus test’ exists as to what effect should be accorded to words contained in a preamble, review of a patent in its entirety should be made to determine whether the inventors intended such language to represent an additional structural limitation or mere introductory language. *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); *In re Stencel*, 828 F.2d 751, 754, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987).”

In the present case, claim 10 specifically recites in the preamble “A computer system for managing inventory”. The body of the claim recites the nature of the data stored in the storage system, this data having a direct bearing on the financial risk management of inventory. In addition, the body of the claim recites that the server receives inputs from clients and converts the inventory problem into a financial portfolio problem. Based on the data in the storage system and the client inputs and having characterized the inventory problem as a financial portfolio problem, the server then generates a set of possible inventory investments, computes a value of the possible inventory investments and selects an inventory investment with the best value. Thus, the preamble of claim 10 is not merely a statement of “intended use” but instead gives “meaning to the claim and properly define[s] the invention.”

The Patent and Trademark Office in the Manual of Patent Examining Procedure (MPEP) has recognized this principle of claim construction at MPEP 2111.02, which provides in part:

“The determination of whether a preamble limits a claim is made on a case-by-case basis in light of the facts in each case; there is no litmus test defining when a preamble limits the scope of a claim. *Catalina Mktg. Int'l v. Coolsavings.com, Inc.*, 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002). See *id.* at 808-10, 62 USPQ2d at 1784-86 for a discussion of guideposts that have emerged from various decisions exploring the preamble’s effect on claim scope, as well as a hypothetical example illustrating these principles.

“‘[A] claim preamble has the import that the claim as a whole suggests for it.’ *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). ‘If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is “necessary to give life, meaning, and vitality” to the claim, then the claim preamble should be construed as if in the balance of the claim.’ *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999).”

And there is another very important principle relating to the rejection of claims under 35 U.S.C. §102 overlooked by the Examiner which is that to anticipate a claim, the reference must teach every element of the claim. See MPEP 2131. The Examiner has not shown that “the admitted prior art, as described in the specification” teaches every element of the claim. In fact, he cannot do so, but instead expressly states that he gives “little patentable weight” to the very novelty recited in the claims.

Given that there is no prior art reference that suggests converting an inventory problem to a financial portfolio problem, the rejection of claims 10 to 12 under 35 U.S.C. §102 is clearly in error and should be reversed.

ARGUMENT VIIID. REJECTIONS UNDER 35 U.S.C. §103

Claims 1 to 9 stand rejected under 35 U.S.C. §103(a). In making this rejection, the Examiner states that “Method claims 1-9 are rejected under 35 U.S.C. 103(a) as unpatentable over the admitted prior art, as described in the specification.”

The question of what the Examiner considers to be “the admitted prior art, as described in the specification” has been discussed at some length in the preceding section relating to the rejection under 35 U.S.C. §102. For that discussion, it was necessary to look ahead to this rejection under 35 U.S.C. §103(a) in order to glean precisely what the Examiner considered to be “the admitted prior art”. That discussion is incorporated herein by reference and applies equally to this rejection.

In this group of claims, claim 1 recites in the preamble “A method for managing inventory using a computer or computer system”. The body of the claim recites the steps of “converting an inventory problem to a financial portfolio problem”, tying back directly to the preamble. The claim continues, reciting the steps of “generating a set of possible inventory estimates”, “computing a value of possible inventory investments with said computer or computer system”, and “selecting an inventory investment with a best value”, all of which, again, tie back to the preamble. Claim 2 adds that the conversion of the inventory problem into a financial portfolio problem “expresses the inventory problem as a combination of long and short positions and put and call options on an asset.” Claim 3 is dependent on claim 2 and adds that the value of possible inventory investments is computed by the steps of “decomposing cash flows associated with the inventory investment into a combination of cash flows that can be represented by a portfolio comprised of long and short positions in an underlying asset”, “computing with a valuation methodology the value of each long and short position in the portfolio”, “summing values of each long and short position in the portfolio to determine a value of the portfolio”, and “setting the value of the inventory investment equal to the value of the portfolio.”

While claims 1, 2 and 3 are of similar scope to claims 10, 11 and 12, the system claims 10–12 do not stand or fall with the method claims 1–9. System claims 10–12 claim a computer system for managing inventory. The claimed system comprises a plurality of clients connected to a common server and a storage system connected to the server. The storage system stores data relating to demand forecast, market price, manufacturing or purchasing costs, and other data relating to inventory. The server is programmed to receive inputs from the plurality of clients and converting the inventory problem to a financial portfolio problem. Claims 1–9, on the other hand, claim a method for managing inventory using “a computer or computer system”. In other words, the claimed method can be practiced on a computer system, but the method is not limited to a computer system since it could be practiced on a stand alone computer.

As mentioned in the preceding argument, the Examiner attempts to equate “portfolio” and “inventory”, but the only basis for this is the Applicants’ own disclosure. The Examiner makes the following statements:

“To the extent that ‘portfolio’ implies the assets are ‘financial assets’ and ‘inventory’ implies the assets are ‘physical assets’, physical assets and financial assets are considered a substitution of *art-recognized equivalents* for the purposes of valuation problems, thus, an obvious substitution to make in applying well known analytical formulae/techniques to the solution of a well known mathematical problem concerning the valuation of assets. Regarding the use of a computer to perform the known analysis/techniques/solution for valuing assets, it has been held that simply providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192” (emphasis added).

What is the possible basis of the Examiner's allegation of "art-recognized equivalents"? It can only be the Applicants' own disclosure which clearly is no basis for the rejection. In fact, Applicants are the first to recognize that financial asset portfolio management tools can be applied to manage inventories, and there does not seem to be any dispute about this from the Examiner. He simply dismisses it as "equivalent", equating "portfolio" and "inventory" without any objective basis in the prior art. And the citation to the case of *In re Venner* is beside the point, since Applicants are not merely automating a manual activity.

MPEP 2141 states the following:

"When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

"(A) The claimed invention must be considered as a whole;

"(B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;

"(C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and

"(D) Reasonable expectation of success is the standard with which obviousness is determined.

Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986)."

It is submitted that the Examiner has failed to follow the tenets set out above. Instead, he has chosen to rely on Applicants' own disclosure and, with the benefit of hindsight, made conclusions of equivalence wholly unsupported by the prior art to arrive at his conclusion of obviousness. This is not the objective standard mandated by 35 U.S.C. §103. The rejection is therefore clearly in error and should be reversed.

ARGUMENT VIII. REJECTION OTHER THAN 35 U.S.C. §§102, 103 AND 112

There are no rejections other than the rejections under 35 U.S.C. §§102 and 103, discussed above.

IX. APPENDIX OF CLAIMS INVOLVED IN THE APPEAL (37 C.F.R. §1.192(C)(9))

The text of the claims involved in the appeal are:

- 1 1. A method for managing inventory using a computer or computer system
2 comprising the steps of:
3 converting an inventory problem to financial portfolio problem;
4 generating a set of possible inventory ^{investments} estimates;
5 computing a value of possible inventory investments with said
6 computer of computer system; and
7 selecting an inventory investment with a best value.

- 1 2. The method for managing inventory of claim 1, wherein the step of
2 converting the inventory problem into a financial portfolio problem expresses
3 the inventory problem as a combination of long and short positions and put
4 and call options on an asset.

- 1 3. The method for managing inventory of claim 2, wherein the value of
2 possible inventory investments is computed by the steps of:
3 decomposing cash flows associated with the inventory investment into
4 a combination of cash flows that can be represented by a portfolio comprised
5 of long and short positions in an underlying asset;
6 computing with a valuation methodology the value of each long and
7 short position in the portfolio;
8 summing values of each long and short position in the portfolio to
9 determine a value of the portfolio; and
10 setting the value of the inventory investment equal to the value of the
11 portfolio.

- 1 4. The method for managing inventory of claim 3, wherein the valuation
2 methodology comprises one or more of a cash flow analysis, an option
3 valuation analysis, a derivatives pricing analysis, variance reduction
4 procedures, and finite difference methods.

- 1 5. The method for managing inventory of claim 3, wherein a value of an
2 underlying asset of the portfolio is a demand for the inventory.

- 1 6. The method for managing inventory of claim 1, wherein operations research
2 techniques are used to compute an inventory investment with a best value.

- 1 7. The method for managing inventory of claim 1, wherein an inventory
2 investment with a best value is a highest expected value.

- 1 8. The method for managing inventory of claim 1, wherein inventory is
2 selected using one of optimization, simulation, dynamic programming,
3 heuristics, rule-based systems, and a budget constraint.

- 1 9. The method for managing inventory of claim 1, wherein the step of
2 computing a value of possible inventory investments is based on one or more
3 of demand variability, risk free interest rate, current level of demand, and
4 historical level of demand.

- 1 10. A computer system for managing inventory comprising a plurality of
2 clients connected to a common server and a storage system connected to the

3 server, the storage system storing demand forecast, market price for products,
4 manufacturing or purchasing cost for products, holding and backlogging cost
5 for products, and inventory quantities for products, the server receiving inputs
6 from the clients and converting an inventory problem to a financial portfolio
7 problem, the server further generating a set of possible inventory investments,
8 computing a value of possible inventory investments, and selecting an
9 inventory investment with a best value.

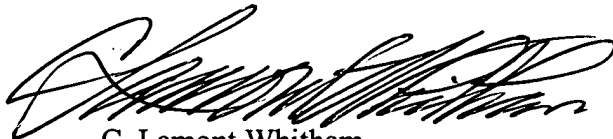
1 11. The computer system for managing inventory of claim 10, wherein the
2 server converts the inventory problem into a financial portfolio problem by
3 expressing the inventory problem as a combination of long and short positions
4 and put and call options on an asset.

1 12. The computer system for managing inventory of claim 11, wherein the
2 server computes the value of possible inventory investments by decomposing
3 cash flows associated with the inventory investment into a combination of
4 cash flows that can be represented by a portfolio comprised of long and short
5 positions in an underlying asset, computing with a valuation methodology the
6 value of each long and short position in the portfolio, summing values of each
7 long and short position in the portfolio to determine a value of the portfolio,
8 and setting the value of the inventory investment equal to the value of the
9 portfolio.

X. OTHER MATERIALS THAT APPELLANT CONSIDERS NECESSARY OR
DESIRABLE

There are no other materials considered necessary or desirable for
consideration in this appeal.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'C. Lamont Whitham', written in a cursive style.

C. Lamont Whitham
Reg. No. 22,424

Whitham, Curtis & Christofferson, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190
Tel. (703) 787-9400
Fax. (703) 787-7557
Customer No. 30743